

Message Text

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FM SECSTATE WASHDC

TO AMEMBASSY STOCKHOLM

AMEMBASSY DUBLIN

UNCLAS STATE 127760

FOLLOWING REPEAT SECSTATE 127760 ACTION PARIS LONDON BRUSSELS
BONN COPENHAGEN NATO INFO ANKARA ATHENS THE HAGUE LISBON
LUXEMBOURG OSLO OTTAWA REYKJAVIK ROME 14 JUNE 1974. QUOTE:

UNCLAS STATE 127760

E.O. 11652: N/A

TAGS: NATO, SENV, ENRG

SUBJECT: CCMS: ENERGY CONSERVATION (ELECTRIC UTILITY LOAD
MANAGEMENT PROGRAM)

REF: STATE 124643

1. PER PHONE CALLS SHANNAHAN (EEA) AND PETTY (UNIPED)
MEETINGS DATES ON ABOVE PROGRAM AND REF A SHIFTED TO
JULY 9 AND 10.

2. PROPOSED AGENDA AS FOLLOWS:

-- AGENDA
-- ELECTRIC UTILITY LOAD MANAGEMENT MEETING
-- NORTH ATLANTIC TREATY ORGANIZATION
-- COMMITTEE FOR THE CHALLENGE OF MODERN SOCIETY
-- PARIS - JULY 9 AND 10

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JULY 9

10:00 AM MEETING CONVENED AND WELCOME TO DELEGATES

10:15 AM BACKGROUND AND OBJECTIVES OF MEETING

10:30 AM GENERAL ROUNDTABLE DISCUSSION REGARDING
-- INFORMATION TO BE EXCHANGED. SEE

-- EXHIBIT I FOR TOPICS.

12:00 NOON LUNCH

2:30 PM MEETING RECONVENED AND CONTINUATION OF
ROUNDTABLE DISCUSSIONS.

4:00 PM LISTING OF PRIORITIES ON INFORMATION
-- EXCHANGE.

6:00 PM MEETING ADJOURNED.

JULY 10

10:00 AM MEETING RECONVENED

10:15 AM DISCUSSION REGARDING RESOLUTION TO BE
O
-- ADOPTED.

11:00 AM DRAFTING OF RESOLUTION

12:00 NOON LUNCH

2:30 PM MEETING RECONVENED AND RESOLUTION
-- FINALIZED.

3:00 PM FINAL AGREEMENT ON RESOLUTION REGARDING
-- SPECIFIC INFORMATION TO BE EXCHANGED,
-- TIMETABLE AND SCHEDULE FOR NEXT MEETINGS.

4:00 PM MEETING ADJOURNED.
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-- EXHIBIT I

-- INFORMATION SOLICITED FROM EUROPEAN ELECTRIC UTILITIES
-- ON THEIR EXPERIENCE IN LOAD MANAGEMENT

A.0 INSTITUTIONAL CONSIDERATIONS

THE PROBLEMS AND THEIR SOLUTIONS MAY DIFFER BETWEEN
GOVERNMENT-OWNED AND PRIVATELY-OWNED UTILITIES. FOR THIS
REASON, IT IS REQUESTED THAT WHERE THE ANSWERS TO
QUESTIONS POSED ARE DIFFERENT FOR THE TWO TYPES OF
UTILITIES, SUCH DIFFERENCES BE NOTED AND EXPLAINED.

A.1 REGULATORY POLICY

FOR EACH OF THE CCMS COUNTRIES PARTICIPATING IN THIS
EFFORT A DESCRIPTION OF REGULATORY POLICY WITH REGARD TO

ELECTRIC UTILITY COMPANIES IS REQUIRED WITH PARTICULAR
EMPHASIS ON INCENTIVES AND DISINCENTIVES TO LOAD
LEVELLING. AN EXAMPLE OF SUCH A DISINCENTIVE WOULD BE
IF THE RATE DETERMINATION PROCEDURE RESULTS IN A RETURN
ON INVESTMENT WHICH MAKES IT MORE FAVORABLE TO THE
UTILITY TO MEET GROWING DEMAND THROUGH ADDITION OF NEW
GENERATION UNITS RATHER THAN IMPROVING THE LOAD FACTOR.

A.2 RATE STRUCTURE

A.21 TO WHAT EXTENT ARE RATE STRUCTURES DETERMINED BY
REGULATION RATHER THAN THROUGH UTILITY INITIATIVE?

A.22 WHAT ARE THE RATE STRUCTURES IN EACH COUNTRY AND
WHAT REGIONAL OR OTHER DIFFERENCES EXIST BETWEEN DIFFERENT
UTILITIES IN THE SAME COUNTRY?

A.23 WHAT FEATURES IN THE RATE STRUCTURES ARE
SPECIFICALLY AIMED AT LOAD LEVELLING? WHAT HAS THE
EXPERIENCE BEEN WITH USING A DEMAND CHARGE AS OPPOSED TO
DIFFERENT ENERGY CHARGES IN ENCOURAGING OFF-PEAK ELECTRIC
ENERGY UTILIZATION?

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A.24 TO WHAT EXTENT ARE SPECIAL RATE STRUCTURES
NEGOTIATED BETWEEN THE UTILITY AND LARGE INDUSTRIAL
CONSUMERS?

A.25. WHAT IS THE ECONOMIC RATIONALE BEHIND THE RATE
STRUCTURE? FOR EXAMPLE, IS THE OFF-PEAK RATE BASED ON
RECOVERING MARGINAL COSTS ONLY? DO THESE MARGINAL COSTS
REFLECT THE FACT THAT MORE EFFICIENT GENERATORS ARE
SUPPLYING INCREMENTAL ELECTRIC ENERGY DURING OFF-PEAK?

A.26 TO WHAT EXTENT DO THE UTILITIES HAVE THE FLEXIBILITY
TO WITHHOLD SUPPLYING A PARTICULAR SERVICE IN ORDER TO
MANAGE THEIR LOAD CURVE? FOR EXAMPLE, IF A UTILITY
HAS SUCCEEDED IN ELIMINATING VALLEYS IN THE WINTER LOAD
CURVE, CAN IT WITHHOLD ATTACHMENT OF FURTHER STORAGE
HEATING UNITS UNTIL SUCH TIME AS SUCH LOAD IS AGAIN
REQUIRED TO FILL IN VALLEYS?

A.27 TO WHAT EXTENT DO UTILITIES HAVE THE FLEXIBILITY TO
ADJUST THE OFF-PEAK RATE TO ACCOUNT FOR CHANGES IN THE
DEPTH OF LOAD VALLEYS? DOES SUCH FLEXIBILITY APPLY ONLY
TO NEW ATTACHMENTS OR ALSO TO OLD ATTACHMENTS?

B.O MARKETS FOR SALE OF OFF-PEAK ELECTRIC ENERGY AT
REDUCED RATES.

FOR EACH OF THE CCMS COUNTRIES PARTICIPATING IN THIS
EFFORT, A LISTING OF EXISTING AND ENVISIONED POTENTIAL
MARKETS FOR SALE OF OFF-PEAK ELECTRIC ENERGY IS
REQUESTED. THIS MAY BE BROKEN DOWN AS FOLLOWS:

THERMAL COMFORT
ELECTRIC HEATING
RESIDENTIAL
SINGLE FAMILY, MULTI-FAMILY
COMMERCIAL
INSTITUTIONAL
INDUSTRIAL
TRANSPORTATION
AIR CONDITIONING
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INDUSTRIAL
IRON AND STEEL PRODUCTION
ALUMINUM PRODUCTION
OTHER

C.O TECHNICAL CONSIDERATIONS

INFORMATION IS REQUESTED ON THE FOLLOWING TECHNICAL
FACTORS AS THEY RELATE TO THE UTILIZATION OF OFF-PEAK
ELECTRIC ENERGY:

ENERGY STORAGE SYSTEMS
ELECTRIC ENERGY DISTRIBUTION
ELECTRIC ENERGY TRANSMISSION
ELECTRIC ENERGY GENERATION AND MAINTENANCE

C.1 ENERGY STORAGE SYSTEMS

C.11 STORAGE HEATING

C.111 STORAGE MEDIUMS. COMPARISON FROM TECHNICAL,
ECONOMIC AND CUSTOMER ACCEPTANCE VIEWPOINTS OF THE
DIFFERENT TYPES OF STORAGE MEDIUMS WHICH CAN BE DIVIDED
INTO: MEDIUMS UTILIZING HEAT OF FUSION; MEDIUMS
UTILIZING SENSIBLE HEAT.

C.112 TYPICAL INSTALLATIONS. COMPARISON FROM TECHNICAL,
ECONOMIC, UTILITY LOAD LEVELLING AND CUSTOMER
ACCEPTANCE VIEWPOINTS OF THE FOLLOWING TYPICAL
INSTALLATIONS: RESIDENTIAL (INDIVIDUAL ROOM UNITS, SINGLE
APARTMENT UNITS, CENTRAL APARTMENT BUILDING UNITS, CENTRAL
SINGLE FAMILY HOME UNITS); COMMERCIAL (E.G., RETAIL

STORES); INSTITUTIONAL (E.G., HOSPITALS, OFFICES); INDUSTRIAL (E.G., STEEL MELTING); TRANSPORTATION (E.G., ELECTRIC BUSES). INFORMATION IS ALSO REQUESTED ON THE FOLLOWING VARIATIONS OF STORAGE HEATING: FLOOR WARMING; STORAGE HEATING COMBINED WITH WATER HEATING; STORAGE OVENS AND STOVES; STORAGE HEATING COMBINED WITH RESISTANCE HEATING; STORAGE HEATING COMBINED WITH HEAT PUMPS; STORAGE HEATING COMBINED WITH SOLAR HEATING (IF ANY).
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C.113 CONTROL SYSTEMS. A DESCRIPTION OF THE CONTROL SYSTEMS ASSOCIATED WITH THE STORAGE DEVICES LISTED UNDER C.112 WITH RELATIVE COSTS, LOAD LEVELLING EFFECTIVENESS, AND CUSTOMER ACCEPTANCE.

INFORMATION IS REQUESTED ON THE FOLLOWING TYPES OF CONTROL SYSTEMS, WHERE UTILIZED: CLOCK CONTROLLED; REMOTE CONTROLLED (RADIO SIGNAL, RIPPLE CONTROL (FROM POWER STATION, FROM DISTRIBUTION SYSTEM, E.G., TRANSFORMER).

INFORMATION IS ALSO REQUESTED ON ANY SPECIAL CONTROL SYSTEMS FOR CONTROLLING AGGREGATE LOAD (E.G., MASTER CONTROL FOR MULTI-FAMILY DWELLING UNIT WHICH SELECTIVELY CUTS OFF INDIVIDUAL DWELLING UNITS FOR SHORT PERIODS OF TIME TO CONTROL PEAK DEMAND). A DISCUSSION OF WHETHER SUCH SYSTEMS OBLVIATE OR MINIMIZE THE NEED FOR STORAGE HEATERS (THROUGH USE OF DIRECT RESISTANCE HEATING PLUS INHERENT STORAGE CAPACITY OF STRUCTURE) WOULD BE HELPFUL.

C.114 THERMAL EFFICIENCY. INFORMATION ON THE THERMAL EFFICIENCY OF EACH OF THE TYPES OF INSTALLATIONS LISTED UNDER C.112 WHEN COUPLED WITH APPROPRIATE CONTROL SYSTEMS FROM UNDER C.113.

THERMAL EFFICIENCY IS DEFINED AS HEAT REQUIRED BY LIVING SPACE TO MAINTAIN COMFORT LEVEL DIVIDED BY HEAT SUPPLIED BY STORAGE UNIT. IN PARTICULAR, SUCH INFORMATION IS REQUESTED FOR INTERMEDIATE SEASONS (SPRING AND AUTUMN) WHERE UNAVOIDABLE HEAT LOSS FROM STORAGE UNIT BECOMES SIGNIFICANT RELATIVE TO HEAT DEMAND.

C.115 METERING SYSTEMS. INFORMATION ON METERING SYSTEMS EMPLOYED WITH INSTALLATIONS LISTED UNDER C.112. IN PARTICULAR, INFORMATION IS REQUESTED ON THE COST, RELIABILITY, AND MAINTENANCE ASSOCIATED WITH SUCH SYSTEMS.

C.116. ELECTRIC ENERGY DISTRIBUTION AND TRANSMISSION. INFORMATION IS REQUESTED ON PROBLEMS EXPERIENCED IN DISTRIBUTION AND TRANSMISSION SYSTEMS DUE TO STORAGE HEATING SYSTEMS. OF PARTICULAR INTEREST IS INFORMATION
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ON OVERLOADING PROBLEMS DUE TO COINCIDENCE OF CHARGING PERIODS AND MEASURES TAKEN TO AVOID SUCH PROBLEMS.

C.117 ELECTRIC ENERGY GENERATION AND MAINTENANCE. INFORMATION IS REQUESTED ON THE IMPACT OF INCREASED OFF-PEAK ELECTRIC ENERGY UTILIZATION ON THE RELIABILITY OF THE SYSTEM. TO THE EXTENT THAT OFF-PEAK USAGE PERMITS LOWER RATIO OF INSTALLED GENERATION CAPACITY TO AVERAGE LOAD, DOES THIS PRESENT RELIABILITY PROBLEM DUE TO REDUCED SAFETY FACTOR AND LESS OPPORTUNITY FOR MAINTENANCE?

C.12 AIR CONDITIONING WITH COLD STORAGE. TO THE EXTENT THAT ANY SUCH SYSTEMS ARE IN OPERATION OR ENVISAGED, INFORMATION SIMILAR TO THAT REQUESTED UNDER C.11 IS SOLICITED.

C.13 INDUSTRIAL USE OF OFF-PEAK ELECTRIC ENERGY.

C.131 CHARACTERISTICS OF INDUSTRIAL ELECTRIC ENERGY DEMAND. INFORMATION IS REQUESTED ON TYPICAL LOAD CURVES FOR INDUSTRIAL DEMAND SERVED BY SPECIFIC UTILITIES. IN PARTICULAR, INFORMATION IS REQUESTED ON THE IMPACT OF THE FOLLOWING FACTORS ON THE LOAD CURVE: (1) TYPE OF INDUSTRY (2) NUMBER OF OPERATING SHIFTS PER DAY (3) COINCIDENCE OF START-UP DEMAND.

C.132 POTENTIAL FOR OFF-PEAK ELECTRIC ENERGY UTILIZATION IN SPECIFIC INDUSTRIES. INFORMATION IS REQUESTED ON ACTUAL EXPERIENCE IN THIS AREA OR ENVISAGED POTENTIAL. IN PARTICULAR, INFORMATION IS SOLICITED ON THE OFF-PEAK RATE NECESSARY FOR SUCH OFF-PEAK ELECTRIC ENERGY CONSUMPTION TO BE COMPETITIVE, AS FAR AS THE CLIENT IS CONCERNED, WITH: (1) ELECTRIC ENERGY UTILIZED IN PLANT WITHOUT SPECIAL DESIGN FOR OFF-PEAK UTILIZATION; (2) USE OF ALTERNATIVE SOURCE OF ENERGY, E.G., GAS, OIL.

THE FOLLOWING INDUSTRIES ARE OF PARTICULAR INTEREST WITH REGARD TO THIS TYPE OF INFORMATION: (1) IRON AND STEEL INDUSTRY (2) ALUMINUM INDUSTRY.
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ECONOMIC INFORMATION ON THE INCREMENTAL INVESTMENT REQUIRED FOR LARGER IRON AND STEEL MELTING FURNACES PLUS HOLDING FURNACES WOULD BE VALUABLE. SIMILAR INFORMATION FOR LARGER ALUMINA SMELTING FURNACES AND MOLTEN ALUMINUM HOLDING FURNACES REQUIRED WOULD ALSO BE VALUABLE.

IN ADDITION, INFORMATION ON CONTROL SYSTEMS, METERING

SYSTEMS, AND THERMAL EFFICIENCY IS REQUESTED. THERMAL EFFICIENCY SHOULD ACCOUNT FOR ADDITIONAL ELECTRIC ENERGY (OR OTHER FORMS OF ENERGY) EXPENDED IN HOLDING FURNACES RELATIVE TO CONTINUOUS MELTING/SMELTING THROUGHOUT THE DAY.

C.14 PUMPED STORAGE. A DISCUSSION OF THE PRESENT CAPACITY FOR OFF-PEAK PUMPED STORAGE AND FUTURE POTENTIAL WOULD BE VALUABLE. AS A PART OF THIS, IT WOULD BE OF INTEREST TO KNOW HOW A GRID SYSTEM BETWEEN THE EUROPEAN NATIONS ASSISTS IN ADVANTAGE BEING TAKEN OF PUMPED STORAGE (IN SUITABLE REGIONS) BY REGIONS NOT AMENABLE TO PUMPED STORAGE.

3. ACTION:

A. REQUEST AMEMBASSY PARIS (1) PASS ABOVE INFO TO MR. PETTY - UNIPED (2) ADD DR. MELVIN CHIOGIFI TO LIST OF US WORKING GROUP (3) MAKE HOTEL RESERVATIONS FOR US WORKING GROUP FOR NIGHTS OF JULY 8 -11.

B. REQUEST AMEMBASSIES LONDON, BRUSSELS, BONN, COPENHAGEN PASS ABOVE INFO TO PERSONS INVITED IN REF.

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